

A New Triglid Fish, *Lepidotrigla longifaciata*, from Japan

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Abstract A new species of the family Triglidae, *Lepidotrigla longifaciata*, is described from Japanese waters. This species has been misidentified as *Lepidotrigla spiloptera* Günther. This species is characterized by the rostral projection with a round outer margin, 3 or 4 well-developed suprapostero-orbital spines, of which the outermost one is prominent, and stout supraorbital and post-orbital spines.

Identification of the gurnards referable to the genus *Lepidotrigla* is extremely difficult because the taxonomic characters vary strikingly with growth stage and individuality. Since the first revision of the Japanese gurnards was made in 1908 by Jordan and Richardson, some Japanese ichthyologists, such as Matsubara and Hiyama (1932), Kuronuma (1939) and Shindo (1951) extensively studied the members of this group. In 1955 Matsubara recognized eight valid and one dubious species in the waters around Japan, mainly based on the results obtained by Kuronuma (1939) and Shindo (1951).

Lately I examined numerous gurnards taken from Tosa Bay, and came to the conclusion that they represent at least 10 species including one new species, *Lepidotrigla longifaciata*, which was identified as *L. spiloptera* Günther by Matsubara and Hiyama (1932) and Kuronuma (1939). Already Richards and Saksena (1977) pointed out that *L. spiloptera* recorded from Japan by Matsubara and Hiyama (1932) and Kuronuma (1939) does not correspond to Günther's *L. spiloptera*, when they revised the triglid fishes from the Indian Ocean.

Material and methods

The specimens used in the present study were mainly taken from Tosa Bay from February 1979 to April 1980. They are deposited in the Department of Cultural Fisheries, Faculty of Agriculture, Kochi University (KA). In addition, some specimens deposited in the Department of Biology, Faculty of Science, Kochi University (BSKU) and the Department of Zoology, National Science Museum, Tokyo (NSMT-P), were used.

The terminology of head spines, such as

supraorbital spine (SO), suprapostero-orbital spine (SPO), postorbital spine (PO), is illustrated in Fig. 2A. Measurements and counts of body parts follow Hubbs and Lagler (1974) except for some characters. Head length is measured from the anterior tip of the maxillary to the posterior edge of the opercular membrane. Head width is taken at the greatest dimension of the preopercular region. Body depth refers to the vertical dimension in front of the first dorsal origin. Body width is measured at the base of the humeral spine.

Lepidotrigla longifaciata, sp. nov.

(Tsuranaga-sokokanagashira)

(Figs. 1, 2)

Lepidotrigla spiloptera (not of Günther): Matsubara and Hiyama, 1932: 38; Kuronuma, 1939: 237; Matsubara, 1955: 1172.

Holotype. KA 1143 (male), 175.0 mm in standard length (216.4 mm in total length), 19 Apr. 1980, Mimase, Kochi City, Tosa Bay, Japan.

Paratypes. 26 specimens, 131.4~174.8 mm SL (161.4~210.7 mm TL). KA 1125, 154.0 mm (188.7 mm), 17 Feb. 1979, Mimase; KA 1127~28, 155.0~174.8 mm (189.0~210.0 mm), 14 Mar. 1979, Mimase; KA 1129, 144.8 mm (179.0 mm), 16 Nov. 1979, Mimase; KA 1132~35, 131.4~145.7 mm (161.3~178.2 mm), 5 Dec. 1979, Mimase; KA 1137~38, 140.8~142.7 mm (174.8~176.0 mm), 25 Dec. 1979, Mimase; KA 1139, 148.2 mm (184.0 mm), 18 Jan. 1980, Mimase; KA 1140, 139.6 mm (169.0 mm), 26 Jan. 1980, Mimase; KA 1141, 157.2 mm (193.2 mm), 22 Mar. 1980, Mimase; KA 1144~51, 115.4~55, 135.7~154.3 mm (169.3~191.0 mm), 26 Apr. 1980, Mimase; KA 1382, 172.0 mm (210.7 mm), 26 Jan. 1980; BSKU 29763, 161.5

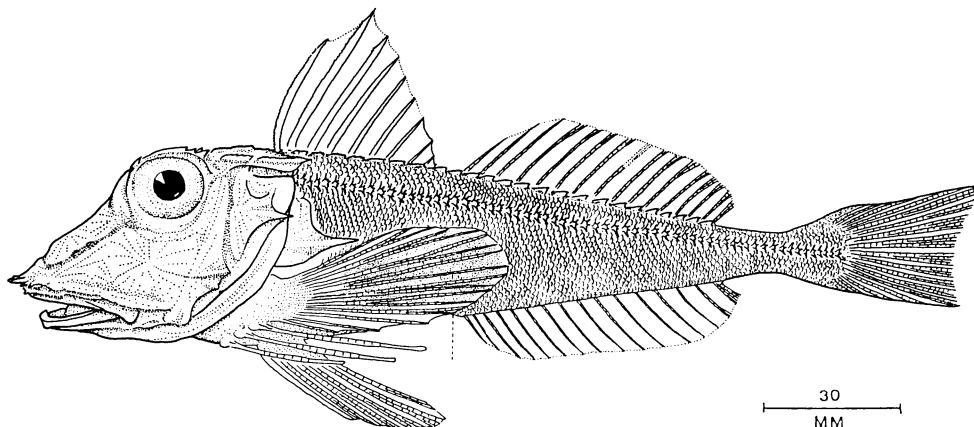


Fig. 1. Lateral aspect of *Lepidotrigla longifaciata*, holotype 216.4 mm in total length.

mm (196.3 mm), 12 Oct. 1979, East China Sea, 28°56'N, 127°01'E; NSMT-P 6902, 153.6 mm (185.6 mm), 16~20 Sep. 1968, Suruga Bay.

Diagnosis. Outer margin of rostral projection round, with a short median spine which is slightly longer than other neighboring spines; caudal peduncle slender; suprapostero-orbital spines well developed, 3 or 4 in number, the outermost one prominent; supraorbital and post-orbital spines stout and pungent; a pit just behind base of suprapostero-orbital spines deeply concave.

Description. Dorsal spines 8~9 (9 in mode); dorsal fin rays 15~17(16); anal fin rays 15~17 (16); branched caudal fin rays 9; pectoral fin rays 11+iii (detached rays). Scales on lateral line 63~68(64); scales above lateral line 4~6(5). Vertebrae including urostyle 11~12(11)+21~22(22)=32~34(33). Branchiostegals 7. Gill-rakers on 1st arch 1+6~7(6). Pyloric caeca 7.

In standard length: head length 2.8~3.0, body depth 4.0~5.0, body width 5.0~5.9, depth of caudal peduncle 18.4~22.4. In head length: snout length 2.0~2.3, orbit 3.1~3.9, interorbital width 5.0~6.1, maxillary length 2.3~2.5, 2nd dorsal spine 1.5~1.9, 3rd dorsal spine 1.6~2.1, pectoral length 1.1~1.3, uppermost detached pectoral ray length 1.3~1.5, pelvic fin length: 1.2~1.5.

Body robust anteriorly, slender posteriorly. Head rather large, spinulated. Snout slightly longer than orbit, upper profile scarcely concave. Rostral projection much shorter than half length

of orbit, outer margin of which is round, with several short spines. Orbit rather large, about equal to or somewhat longer than depth of sub-orbital stay. Interorbital space deeply concave, much narrower than orbit. Mouth wide, extending below anterior border of orbit. Teeth on both jaws villiform, setting closely in a band; vomerine teeth also villiform, about 20 in number, forming a small band; palatine toothless. Gill-rakers on 1st arch tubercle-like in shape, well separated each other (Fig. 2B).

Supraorbital spine stout and pungent, usually 2 in number (Fig. 2A); suprapostero-orbital spines 3 or 4 in number, the outermost one much longer than others; a pit just behind base of suprapostero-orbital spines deeply concave; postorbital and nuchal spines large, ridged; opercular spine long and sharp; humeral spine stout and long, nearly equal to or slightly longer than diameter of orbit.

Anterior 2 or rarely 3 dorsal spines finely serrated anteriorly; 2nd dorsal spine longest, nearly reaching to below origin of 2nd dorsal fin, 3rd dorsal spine slightly shorter than 2nd dorsal spine. Anal fin inserted just below origin of 2nd dorsal fin. Caudal fin slightly emarginated, upper lobe more or less longer than lower one. Pectoral fin moderate in length, nearly reaching to below base of 3rd or 4th dorsal ray; the lower 3 rays detached completely, uppermost one longest, usually not reaching to tip of pelvic fin. Pelvic fin well developed, extending nearly to or slightly beyond origin of anal fin.

Scales on body deciduous, ctenoid on dorsal and lateral sides, cycloid on belly; breast naked; lateral line forked on caudal fin.

Coloration: In life, head and body reddish above, silver white below; fins except for pectoral and anal fins reddish, a red blotch as large as eye present on 1st dorsal fin membrane between 4th and 6th spines and on posterior half of lower lobe of caudal fin respectively; pectoral fin whitish anteriorly, blackish posteriorly, its inner surface blackish except for basal and lower area colored with red; anal fin whitish pink.

In formalin, body and fins light brown, inner surface of pectoral fin uniformly black except for some pale lower area.

Distribution. Suruga Bay, Tosa Bay and East China Sea.

Remarks. *Lepidotrigla longifaciata* is very similar to *Lepidotrigla alcocki* Regan reported from Saya de Malha Bank, Indian Ocean in general body shape and the structure of rostral projection. They differ in that *L. alcocki* possesses the longer 1st detached pectoral ray and characteristic marking on the inner surface of the pectoral fin. The first detached pectoral ray of *L. alcocki* extends posteriorly beyond the tip of the pelvic fin when depressed, while in *L. longifaciata* the ray does not reach the tip of the pelvic fin. The inner surface of the pectoral fin is crossed by a broken oblique white stripe on the blackish background in *L. alcocki*, but without any stripe in *L. longifaciata*. The present species agrees well with *L. multispinosus* Smith found in the coast of East Africa. The two may clearly be distinguished by elongation of the pectoral fin, the tip of which reaches to a vertical through the base of the 3rd or 4th dorsal ray in *L. longifaciata*, to below the base of the 7th dorsal ray in *L. multispinosus*.

A single specimen from Suruga Bay, Japan, identified as *L. spiloptera* Günther by Matsubara and Hiya (1932) may be referable to this species, as do some subsequent listings of *L. spiloptera* from Kochi (Kamohara, 1936; Kuronuma, 1939) and Nagasaki (Kuronuma, 1939). According to Günther's (1880) original description and a few photographs of the holotype given me by Dr. W. J. Richards, *L. spiloptera* is separable from *L. longifaciata* by having a shorter triangular rostral projection, a wider

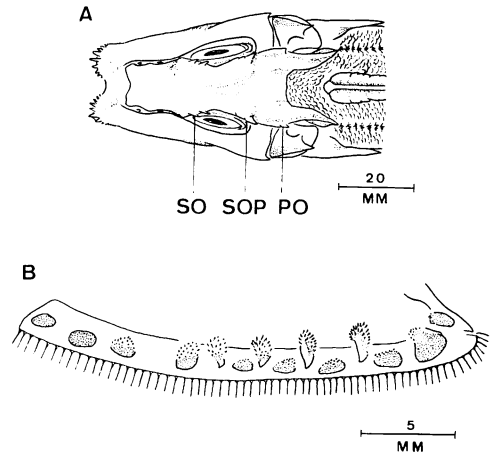


Fig. 2. A: Dorsal aspect of head of *Lepidotrigla longifaciata*. B: Gill-rakers on the 1st arch of *Lepidotrigla longifaciata*. PO, postorbital spine; SO, supraorbital spine; SOP, suprapostero-orbital spine.

interorbital space, the width of which is nearly equal to the vertical diameter of the eye, and numerous white ocelli on the inner surface of the pectoral fin.

Etymology. This species is named *longifaciata* in reference to its long head.

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Literature cited

- Günther, A. 1880. Report on the shore fishes procured during the voyage of H.M.S. Challenger, in the years 1873~76. Rep. Scient. Results Voy. Challenger, 1 (6): 1~82, pls. 1~32.
- Hubbs, C. L. and K. F. Lagler. 1974. Fishes of the Great Lakes region. Univ. Michigan Press, Michigan, xv+213 pp., 251 figs., 44 pls.
- Jordan, D. S. and R. E. Richardson. 1908. A review of the flat-head, gurnards and the other mail-cheeked fishes of the water of Japan. Proc. U.S. Nat. Mus., 33: 629~670, figs. 1~9.
- Kamohara, T. 1936. On two new species of fishes found in Japan. Zool. Mag., 48 (12): 1006~1008, figs. 1~2.
- Kuronuma, K. 1939. A study on the Triglidae of Japan. Bull. Biogeogr. Soc. Japan, 9: 223~260, figs. 1~10.
- Matsubara, K. 1955. Fish morphology and hierarchy. Part II. Ishizaki-shoten, Tokyo, v+791~1605 pp., figs. 291~536. (In Japanese).
- Matsubara, K. and J. Hiyama. 1932. A review of Triglidae, a family of mail-cheeked fishes, found in the water around Japan. J. Imp. Fish. Inst. Tokyo, 28: 1~67, figs. 1~22.
- Richards, W. J. and V. P. Saksena. 1977. Systematics of the gurnards, genus *Lepidotrigla*, from

the Indian Ocean. Bull. Mar. Sci., 27: 208~222, figs. 1~6.

- Shindo, S. 1951. Studies on the stock of *Lepidotrigla* of the Eastern Sea. (1) On the specific characteristics. Bull. Japan. Soc. Sci. Fish., 17: 83~90, pl. 1.

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日本産ホウボウ科魚類の1新種ツラナガソコカナガシラ

矢頭 卓児

本種は, Matsubara and Hiyama (1932) により駿河湾から, Kamohara (1936) により土佐湾から, さらに Kuronuma (1939) により長崎および土佐湾からツラナガソコカナガシラ *Lipidotrigla spiloptera* Günther として報告された。しかし, 吻突起の外縁が丸いこと, および胸鱗内面に白色点のないことから, 明らかに *L. spiloptera* と別種であることが判明したので, 土佐湾・駿河湾および東シナ海より採集した27個体にもとづき, *Lepidotrigla longifaciata*, sp. nov. として記載した。

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